

## CLAIMS

I claim:

1. A process to manufacture an implantable cable, said process comprising the steps of:

establishing a plurality of grooves on a first fluoropolymer film layer;

positioning biocompatible conductor wires into one or more of said grooves;

applying heat to confine said wires into said grooves;

depositing a second fluoropolymer layer to form a first structure;

creating a second structure with outer surfaces by encapsulating said first structure through application of heat;

undulating said second structure;

activating said outer surfaces of the said second structure to form a final structure;  
and

encapsulating said final structure with silicone to form said implantable cable.

2. The process of claim 1, wherein said first and second fluoropolymer film layers are comprised of FEP or PFA.

3. The process of claim 1, wherein said conductor wires are comprised of Pt or Pt/Ir.

4. The process of claim 1, wherein the first and second fluoropolymer layers are removed from an end portion of said implantable cable to partially expose one or more conductor wires.

5. The process of claim 4, wherein said end portion is removed through laser cutting.

6. The process of claim 3, wherein said conductor wires have round, oval or rectangular cross sections.

7. An implantable cable comprising:

a plurality of conductor wires embedded within a fluoropolymer film;

said fluoropolymer film comprising outer surfaces and at least one tip;

said fluoropolymer film being overall undulated;

said fluoropolymer film being removed at a tip of said implantable cable;

8. The implantable cable of claim 7, wherein said fluoropolymer is activated.

9. The implantable cable of claim 7, wherein said fluoropolymer is activated by sodium treatment of said implantable cable.

10. The implantable cable of claim 7 wherein said fluoropolymer is activated by plasma treatment of said implantable cable.

11. The implantable cable of claim 8, 9 or 10 wherein said cable is encased with silicone after activating said fluoropolymer.

12. The implantable cable of claim 7, wherein said biocompatible film is comprised of FEP or PFA.

13. The implantable cable of claim 7, wherein said conductor wires are comprised of Pt or Pt/Ir.

14. The implantable cable of claim 13, wherein said conductor wires have round, oval or rectangular cross sections.